



# Rupprecht Law P. A.

*Helping Businesses Navigate Aviation Law*

10/28/2021

U. S. Department of Transportation  
Docket Operations  
West Building Ground Floor, Room W12-140,  
1200 New Jersey Ave., SE,  
Washington, DC 20590

Re: Petition for Exemption Under Part 11 of the Federal Aviation Regulations from 14 CFR §§ 107.36; 137.19(c) and (d); 137.19(e)(2)(ii), (iii), and (v); 137.31(a) and (b); 137.33(a) and (b); 137.41(c), and 137.42.

## **PETITION FOR EXEMPTION**

Dear Sir or Madam:

Extension Weed Science Program of Auburn University petitions for an exemption from the listed Federal Aviation Regulations (“FAR’s”) to conduct agricultural aircraft operations.<sup>1</sup> The authority for the FAA to grant this petition is from 14 C.F.R. Part 11.

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<sup>1</sup> “Agricultural aircraft operation means the operation of an aircraft for the purpose of (1) dispensing any economic poison, (2) dispensing any other substance intended for plant nourishment, soil treatment, propagation of plant life, or pest control, or (3) engaging in dispensing activities directly affecting agriculture, horticulture, or forest preservation, but not including the dispensing of live insects.” 14 C.F.R. § 137.3.



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## **I. QUICK REFERENCE SUMMARY**

- The operations will be conducted under Part 107 for agricultural aircraft operations.
- We intend to conduct Part 137 agricultural aircraft operation services which include the dispensing of fertilizers and economic poisons some of which are classified as hazardous materials; therefore, we are requesting an exemption from the prohibition on carrying hazardous materials so we can carry fertilizers and economic poisons which are classified as hazardous materials.
- The aircraft will be:
  - DJI Agras T10
  - DJI Agras MG-1P
- The Petitioner will operate under the following associated operating documents:
  - Training Manual
  - Flight Operations Manual

## **II. PETITIONER'S ADDRESS:**

Please send the granted exemption to:

Extension Weed Science Program of Auburn University  
Attn: Dr. Steve Li, Extension Specialist, Associate Professor  
201 Funchess Hall  
Auburn Univ, AL 36849

## **III. THE REGULATIONS WHICH THE PETITIONER IS REQUESTING EXEMPTION FROM**

- 14 C.F.R. § 107.36
- 14 C.F.R. § 137.19(c) and (d)
- 14 C.F.R. § 137.19(e)(2)(ii), (iii), and (v)
- 14 C.F.R. § 137.31(a) and (b)
- 14 C.F.R. § 137.33(a) and (b)
- 14 C.F.R. § 137.41(c)
- 14 C.F.R. § 137.42



#### IV. THE EXTENT OF RELIEF THE PETITIONER IS SEEKING

The Petitioner proposes these restrictions and believes that these limitations provide an equivalent level of safety, if not greater, as the FAR's presently impose upon the Petitioner. Each of the regulations above will be talked about in greater detail in another section in this petition.

These limitations and conditions are equal to Exemption # 17261 except as noted below. The list of limitations and conditions include the following:

1. Operations authorized by this grant of exemption are limited to any small unmanned aircraft system (UAS) model with a maximum takeoff weight of less than 55 pounds, including everything that is on board or otherwise attached to the aircraft.
2. When adding any small UAS or new small UAS models that will be operated under this exemption, the operator must notify the Flight Standards District Office (FSDO) which holds their operating certificate. Additionally, operations authorized by this exemption are limited to the small UAS listed on the operator's part 137 Letter of Authorization (LOA).
3. This exemption and all documents needed to operate the small UAS and conduct its operations in accordance with the conditions and limitations stated in this grant of exemption, are hereinafter referred to as the operating documents. The operating documents must be accessible during UAS operations and made available to the Administrator upon request. If a discrepancy exists between the Conditions and Limitations in this exemption, any applicable FAA issued waivers /authorizations, and the procedures outlined in the operating documents, the most restrictive conditions, limitations, provisions, or procedures apply and must be followed. The operator may update or revise its operating documents. It is the operator's responsibility to track such revisions and present updated and revised documents to the Administrator or any law enforcement official upon request. The operator must also present updated and revised documents if it petitions for extension or amendment to this grant of exemption. If the operator determines that any update or revision would affect the basis upon which the FAA granted this exemption, then the operator must petition for an amendment to its grant of exemption. The General Aviation and Commercial Division, (AFS-800) may be contacted if questions arise regarding updates or revisions to the operating documents.



4. Any small UAS used by the operator that has undergone maintenance or alterations that affect the small UAS operation or flight characteristics, e.g. replacement of a flight critical component, must undergo a functional test flight prior to conducting further operations under this exemption. Functional test flights may only be conducted by a remote PIC with a Visual Observer (VO) and other personnel necessary to conduct the functional flight test (such as a mechanic or technician). The functional test flight must be conducted in such a manner so as to not pose an undue hazard to persons and property.
5. The operator must follow the UAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components. Each UAS operated under this exemption must comply with all manufacturer safety bulletins.
6. PIC qualifications: The remote PIC must demonstrate the ability to safely operate the small UAS in a manner consistent with how it will be operated under this exemption, including the applicable knowledge and skills requirements for agricultural aircraft operations outlined in 14 CFR part 137, evasive and emergency maneuvers, and maintaining appropriate distances from persons, vessels, vehicles and structures before operating non-training, proficiency, or experience-building flights under this exemption.
7. For small UAS operations where Global Positioning System (GPS) signal is necessary to safely operate the small UA, the remote PIC must immediately recover/land the small UA upon loss of GPS signal.
8. If the remote PIC loses command or control link with the small UA, the small UA must follow a pre-determined route to either reestablish link or immediately recover or land.
9. The remote PIC must abort the flight operation if unpredicted circumstances or emergencies that could potentially degrade the safety of persons or property arise. The remote PIC must terminate flight operations without causing undue hazard to persons or property in the air or on the ground. Documents the operator must retain under §§ 107.13, 137.33, and in accordance with this exemption (including but not limited to: operators exemption, any waiver held, a facsimile of the agricultural aircraft operator certificate, training manual, operations manual, and registration certificate) must be available to the remote PIC at the Ground Control Station of the small UAS at all times the aircraft are operating. These documents must be made



available to the Administrator or any law enforcement official upon request. Airworthiness certificates applicable to the small UAS to which this exemption applies are not required for compliance with this condition.

10. The relief granted from § 107.36 is limited to the use of any economic poison as defined in § 137.3.
11. The remote PIC may operate the small UAS from a moving device or vehicle as described in § 107.25, which permits such operation in sparsely populated areas, provided the small UAS do not transport property for compensation or hire. If conducting agricultural aircraft operations in accordance with § 107.25, the remote PIC must satisfactorily demonstrate the applicable knowledge and skills requirements of § 137.19 in the type of device or vehicle to be used in agricultural aircraft operations.
12. This exemption will not be valid for operations outside of the United States.



## **V. REASONS WHY THE PETITIONER IS SEEKING RELIEF FROM THE REGULATIONS AND WHY THE EXEMPTION WOULD PROVIDE AN EQUIVALENT LEVEL OF SAFETY**

### **A. 14 C.F.R. § 107.36 Carriage of Hazardous Material.**

Section 107.36 says, “A small unmanned aircraft may not carry hazardous material. For purposes of this section, the term hazardous material is defined in 49 CFR 171.8.” Some of the chemicals that need to be dispensed during the agricultural aircraft operations may be classified as hazardous material. Because this regulation is not waivable under 107.205, we are requesting an exemption from it.

An equivalent level of safety can be achieved by requiring the Petitioner to obtain a FAA agricultural aircraft operator certificate prior to operations, use pilots who have a remote pilot certificate, fly aircraft weighing less than 55 pounds (limiting the amount of hazmat being carried), follow any and all restrictions placed on the agricultural aircraft operator certificate, and limit the hazardous material being carried to only economic poisons.

The requirement to use only FAA-certificated remote pilots also alleviates any security concerns as the TSA would have already done a background check on the individual possessing the pilot certificate.

### **B. 14 C.F.R. §§ 137.19(c), 137.41(c) Pilot in Command.**

Section 137.19 paragraph (c) says, “Commercial operator—pilots. The applicant must have available the services of at least one person who holds a current U.S. commercial or airline transport pilot certificate and who is properly rated for the aircraft to be used. The applicant himself may be the person available.” Section 107.41 paragraph (c) references back to 137.19.

These regulations are extremely burdensome and unnecessary. As found in the previously granted exemptions, an equivalent level of safety of the regulations can be achieved by requiring a remote pilot certificate, operations to be done in accord with Parts 107 & 137, an agricultural aircraft operations certification be obtained prior to operations, and the proposed restrictions in this exemption.



### **C. 14 C.F.R. § 137.19(d) Aircraft**

Section 137.19 paragraph (d) says, “The applicant must have at least one certificated and airworthy aircraft, equipped for agricultural operation.” Small unmanned aircraft operated under Part 107 do not have any aircraft certification requirements. Under Part 107, the remote pilot in command is responsible for determining if the aircraft is airworthy. The requirements contained in the manufacturer’s manuals, the requirement in Part 107 for the remote pilot to conduct pre-flight inspections of the aircraft, and the requirement of the agricultural aircraft operator certificate be obtained prior to flight will be in total sufficient for determining the airworthiness of the aircraft which provides an equivalent level of safety as the regulations for agricultural aircraft operations. Moreover, the Petitioner is the one best suited to maintain the aircraft in an airworthy condition to provide the equivalent level of safety as the regulations.

### **D. 14 C.F.R. § 137.19(e)(2)(ii), (iii), and (v) Skills Test**

Section 137.19 paragraphs (e)(2)(ii), (iii), and (v) are unnecessary and not applicable for small unmanned aircraft. As the FAA stated in Exemption 17261, “the FAA has determined that demonstration of the skills described in these paragraphs is not necessary because they are not compatible or applicable to” agricultural aircraft operations with multi-rotor unmanned aircraft. Therefore, relief should be granted to agricultural aircraft operations which utilize only small UAS.

An equivalent level of safety can be obtained by requiring the remote pilot to have a valid remote pilot certificate, requiring the Petitioner to obtain prior to operations an agricultural aircraft operations certificate, and requiring that operations must be done under the proposed restrictions of this petition.

### **E. 14 C.F.R. § 137.31(a) and (b) Aircraft Requirements.**

Section 137.31 says, “No person may operate an aircraft unless that aircraft— (a) Meets the requirements of §137.19(d); and (b) Is equipped with a suitable and properly installed shoulder harness for use by each pilot.” As discussed above, small unmanned aircraft operating under Part 107 do not have any aircraft certification requirements. Furthermore, all of the unmanned aircraft do not have shoulder harnesses for use by the pilot and none could comply with 137.31(b). Installing a shoulder harness would not provide any added safety benefit.





The requirements contained in the manufacturer's manuals, the requirement in Part 107 for the remote pilot to conduct pre-flight inspections of the aircraft, and the requirement of the agricultural aircraft operator certificate be obtained prior to flight will be in total sufficient for determining the airworthiness of the aircraft which provides an equivalent level of safety as the regulations for agricultural aircraft operations.

**F. 14 C.F.R. § 137.33 Carrying of Certificate.**

Section 137.33 paragraph (a) requires the agricultural aircraft operator certificate be carried on the aircraft. Additionally, paragraph (b) requires the airworthiness certificates to be available for inspection at the base.

A similar situation was addressed in the [FAA legal opinion letter of Mark Bury to John Duncan on August 8, 2014](#) where the FAA general counsel's office answered whether registration and airworthiness documents must be carried aboard an unmanned aircraft. Mr. Bury said, "we find that the intent of these regulations is met if the pilot of the unmanned aircraft has access to these documents at the control station from which he or she is operating the aircraft."

Likewise, the Petitioner here proposes to keep the agricultural aircraft operator certificate and registration all at the ground station. These documents can be available for inspection by the FAA or law enforcement. This all provides an equivalent level of safety as the regulations.

Additionally, the Petitioner needs relief from paragraph (b) because operations under Part 107 do not require an airworthiness certificate and it would be extremely burdensome to acquire an airworthiness certificate in order to comply with this paragraph of the regulation. An equivalent level of safety can be reached by requiring the remote pilot to obtain an agricultural aircraft operators certificate prior to operations and conducting pre-flight inspections.

**G. 14 C.F.R. § 137.41(c) Pilot in Command.**

Section 137.41 paragraph (c) says, "No person may act as pilot in command of an aircraft unless he holds a pilot certificate and rating prescribed by §137.19 (b) or (c), as appropriate to the type of operation conducted. In addition, he must demonstrate to the holder of the Agricultural Aircraft Operator Certificate conducting the operation that he has met the knowledge and skill requirements of §137.19(e).



If the holder of that certificate has designated a person under §137.19(e) to supervise his agricultural aircraft operations the demonstration must be made to the person so designated.”

An exemption is needed from this regulation based upon the same reasons listed above for Section 137.19 (c) and for Section 137.19(e)(2)(ii)-(v). An equivalent level of safety can be provided by the proposed restrictions listed herein that have already been determined by the FAA in Exemption 17261 to provide an equivalent level of safety as the regulations. Additionally, all of the pilots in command will obtain a remote pilot certificate and have passed company training.

#### **H. 14 C.F.R. § 137.42 Fastening of Safety Belts and Shoulder Harnesses.**

Section 137.42 says, “No person may operate an aircraft in operations required to be conducted under part 137 without a safety belt and shoulder harness properly secured about that person except that the shoulder harness need not be fastened if that person would be unable to perform required duties with the shoulder harness fastened.”

This regulation is designed to protect people on board the aircraft. Since there are no people on board, whether we follow it or not, the impact on safety is the same. However, because the law requires it, we require an exemption from this regulation. Therefore, an equivalent level of safety can be achieved by flying under the proposed restrictions herein.

#### **VI. REASONS WHY GRANTING THIS PETITION WOULD BE IN THE PUBLIC INTEREST**

If the Petitioner does not have the option of using the Petitioner’s unmanned aircraft (UA), the only other ways to spray the ground areas are by using manned aircraft, mobile spraying rigs, or on foot by hand operated equipment. Some of these other options are not as safe, cost-effective, or time efficient as unmanned aircraft. Allowing the Petitioner to use the UA gives the Petitioner more options when selecting the best tool for the given location and operation. UA can be extremely precise and allow for the precise application of economic poisons. UA can also be rapidly deployed to inaccessible areas which enables the Petitioner to rapidly combat problems. The UA have multiple motors while most manned aircraft have only one engine; thus, there is some motor redundancy for some UA in case of a motor malfunction. Lastly, the UA will be operated at lower altitudes than most manned aircraft. This vertical separation greatly reduces the chance of a mid-air collision.



## VII. FEDERAL REGISTER SUMMARY

As required by 14 C.F.R. Part 11, below is provided a summary of the petition to be published in the Federal Register should it be determined that publishing is needed.

The Petitioner is seeking an exemption from the following rules:

14 C.F.R. §§ 107.36; 137.19(c) and (d); 137.19(e)(2)(ii), (iii), and (v); 137.31(a) and (b); 137.33(a) and (b); 137.41(c), and 137.42 to operate an unmanned aircraft, weighing less than 55 pounds, commercially for agricultural aircraft operations as defined in 14 C.F.R. § 137.3.

This exemption is needed because the listed regulations are extremely burdensome to operate under while conducting agricultural aircraft operations under the Federal Aviation Regulations. The proposed restrictions contained in the petition and manuals will provide an equivalent level of safety as the regulations.



## VIII. OPERATING DOCUMENTS

Extension Weed Science Program of Auburn University will operate only within the limitations above and any limitations listed in the manufacturer's manuals. Additionally, the remote pilots will all go through company training using the training manual and operate under the company's flight operations manual. The limitations above, from the previously granted exemption (# 17261), will be followed if there is a conflict with any of the manuals.

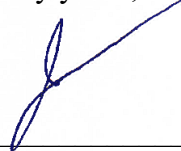
## IX. STATUTORY AUTHORITY TO GRANT THIS PETITION

The Federal Aviation Act gives the FAA the authority to grant exemptions. "The Administrator may grant an exemption from a requirement of a regulation prescribed under subsection (a) or (b) of this section or any sections 44702-44716 of this title if the Administrator finds the exemption in the public interest."<sup>2</sup>

## X. CONCLUSION

The operation of Extension Weed Science Program of Auburn University using a small UAS, weighing less than 55 lbs., for agricultural aircraft operations, conducted under the proposed restrictions outlined above, will provide an equivalent level of safety as the burdensome regulations; therefore, this petition should be granted without delay. If I can be of any assistance, please do not hesitate to contact me at (561)222-6979 or at my email [jon@jrupprechtlaw.com](mailto:jon@jrupprechtlaw.com)

Sincerely yours,

  
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Jonathan Rupperecht, Esq.

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<sup>2</sup> 49 U.S.C. § 44701(f); *accord* 49 U.S.C. § 44711(b).